

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
22 January 2004 (22.01.2004)

PCT

(10) International Publication Number
WO 2004/007597 A1

(51) International Patent Classification⁷: **C08J 9/26**,
9/28, 5/22

BROVKO, Olexandr, Olexandrovych [UA/UA]; 3v
Oleny Teligy, Apartment 49, 14112 Kiev (UA). **ELSKA,**
Ganna, Valentinivna [UA/UA]; 51/53 Vladimirska
Street, Apartment 68, Kiev (UA).

(21) International Application Number:
PCT/GB2003/003046

(74) Agents: **STUART, Ian et al.**; Mewburn Ellis, York House,
23 Kingsway, London, Greater London WC2B 6HP (GB).

(22) International Filing Date: 11 July 2003 (11.07.2003)

(25) Filing Language: English

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC,
SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA,
UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(26) Publication Language: English

(30) Priority Data:
0216333.5 13 July 2002 (13.07.2002) GB

(71) Applicant (*for all designated States except US*): **CRAN-**
FIELD UNIVERSITY [GB/GB]; Silsoe, Milton Keynes,
Bedfordshire MK45 4DT (GB).

(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **PILETSKY,**
Sergey, Anatoliyovich [UA/GB]; 8 Harter Avenue, Cran-
field, Bedfordshire MK43 0EE (GB). **PILETSKA, Olena,**
Volodimirivna [UA/GB]; 8 Harter Avenue, Cranfield,
Bedfordshire MK43 0EE (GB). **TURNER, Anthony,**
Peter, Francis [GB/GB]; c/o Cranfield University, Sil-
soe, Milton Keynes, Bedfordshire MK45 4DY (GB).
WARNER, Philip, James [GB/GB]; 33 Vantock Close,
Brownswood, Milton Keynes, Berkshire MK7 8DS (GB).
SERGEYEVA, Tetyana, Anatolivna [UA/UA]; 14
Teremkovskaya Str., Apartment 78, 03187 Kiev (UA).

Published:

— with international search report

*For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*

(54) Title: POROUS MOLECULARLY IMPRINTED POLYMER MEMBRANES

(57) Abstract: Highly porous substance-selective polymeric membranes are produced by co-polymerisation of functional monomers and cross-linker in the presence of template, plasticiser (non-extractable component), and pore-forming component (extractable component). Extraction of the template and porogen molecules leads to the formation of small (< 100 nm) and large (> 500 nm) pores, including small pores having a shape and arrangement of functional groups complementary to the template molecule. The membranes possess enhanced affinity towards the template and its analogues and also have high flexibility and porosity. Such membranes can be used in analytical chemistry (as sensor elements and for solid-phase extraction materials) for applications in pharmacology, medicine, the food industry, water purification and environmental clean up.

WO 2004/007597 A1

INTERNATIONAL SEARCH REPORT

International application No
PCT/60 J3/03046

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C08J9/26 C08J9/28 C08J5/22

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C08J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 00 32648 A (GOTTSCHALL INSTRUCTION DR ;GOTTSCHALL KLAUS (DE)) 8 June 2000 (2000-06-08) claims 1-10	1-16
Y	WO 01 49240 A (NOVARTIS ERFIND VERWALT GMBH ;NOVARTIS AG (CH); DOMSCHKE ANGELIKA) 12 July 2001 (2001-07-12) claims 1-10	1-16
P,X	WO 03 033575 A (MURRAY GEORGE M ;UNIV JOHNS HOPKINS (US)) 24 April 2003 (2003-04-24) claim 1	1-16
P,X	US 2003/113234 A1 (MURRAY GEORGE M) 19 June 2003 (2003-06-19) claim 1	1-16

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *Z* document member of the same patent family

Date of the actual completion of the international search

24 September 2003

Date of mailing of the international search report

01/10/2003

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Natus, G

INTERNATIONAL SEARCH REPORT

Internati — .pplication No
PCT/GB 03/03046

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, X	US 2003/059346 A1 (MURRAY GEORGE M) 27 March 2003 (2003-03-27) claim 1 -----	1-16.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB 03/03046

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0032648	A	08-06-2000	DE 19855173 A1	31-05-2000
			DE 19928236 A1	28-12-2000
			AU 1655900 A	19-06-2000
			AU 757078 B2	30-01-2003
			AU 1777700 A	19-06-2000
			BR 9915787 A	21-08-2001
			CA 2352066 A1	08-06-2000
			CA 2352068 A1	08-06-2000
			CN 1332752 T	23-01-2002
			CZ 20011885 A3	17-10-2001
			DE 19860972 A1	26-04-2001
			WO 0032648 A1	08-06-2000
			WO 0032649 A1	08-06-2000
			EP 1149118 A1	31-10-2001
			EP 1141038 A1	10-10-2001
			HU 0200085 A2	29-05-2002
			JP 2003510376 T	18-03-2003
			JP 2002531599 T	24-09-2002
			SI 20641 A	28-02-2002
			ZA 200104298 A	23-05-2002
			AT 232884 T	15-03-2003
			AU 6151100 A	09-01-2001
			BR 0011798 A	26-03-2002
			CA 2375254 A1	28-12-2000
			CN 1355816 T	26-06-2002
			CZ 20014460 A3	12-06-2002
			DE 50001288 D1	27-03-2003
			DK 1192191 T3	07-07-2003
			WO 0078825 A1	28-12-2000
			EP 1192191 A1	03-04-2002
			HU 0201808 A2	28-09-2002
			JP 2003502491 T	21-01-2003
			SI 1192191 T1	31-08-2003
			US 6576767 B1	10-06-2003
			ZA 200110167 A	02-10-2002
WO 0149240	A	12-07-2001	AU 4232701 A	16-07-2001
			CA 2394653 A1	12-07-2001
			WO 0149240 A2	12-07-2001
			EP 1252196 A2	30-10-2002
			JP 2003519250 T	17-06-2003
			NO 20023230 A	03-07-2002
			US 2002004573 A1	10-01-2002
WO 03033575	A	24-04-2003	WO 03033575 A1	24-04-2003
			US 2003113234 A1	19-06-2003
US 2003113234	A1	19-06-2003	WO 03033575 A1	24-04-2003
US 2003059346	A1	27-03-2003	NONE	